ETB9F000 Series

ETX v4.01 SoM
with Multiple I/O Features

User's Manual

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CAUTION

If you replace wrong batteries, it causes the danger of explosion. It is recommended by the manufacturer that you follow the manufacturer's instructions to only replace the same or equivalent type of battery, and dispose of used ones.

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ESD Precautions

Computer boards have integrated circuits sensitive to static electricity. To prevent chipsets from electrostatic discharge damage, please take care of the following jobs with precautions:

- Do not remove boards or integrated circuits from their anti-static packaging until you are ready to install them.
- Before holding the board or integrated circuit, touch an unpainted portion of the system unit chassis for a few seconds. It discharges static electricity from your body.
- Wear a wrist-grounding strap, available from most electronic component stores, when handling boards and components.

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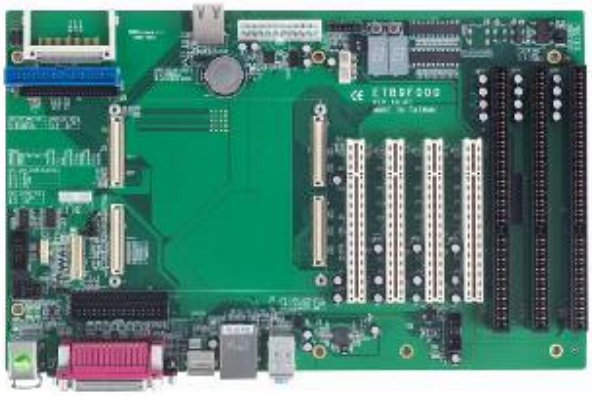
Chapter 1
Introduction



The **ETB9F000** is a finest embedded ETX computer-on-module in the market, which makes a generic interface to connect the module to peripherals such as hard disk, mouse, and display. It is an all-in-one single module as computing engine with excellent Multiple I/O, LVDS LCD, one VGA port, TV-Out, Fast Ethernet and AC'97/HD digital Audio interface. It also provides one FDD/LPT port, four 32-bit/33MHz PCI Bus master and three Full ISA Bus supported for expansion purpose, PATA IDE, two COM ports, four USB 2.0 and Watchdog Timer.

Therefore, the **ETB9F000** module provides versatile functions to cater for various clients' applications; moreover, its flexible modularity goes with appropriately designed baseboard to make the best solution for customization, and last a durable lifetime to cope with fast evolving technology.

1.1 Specifications

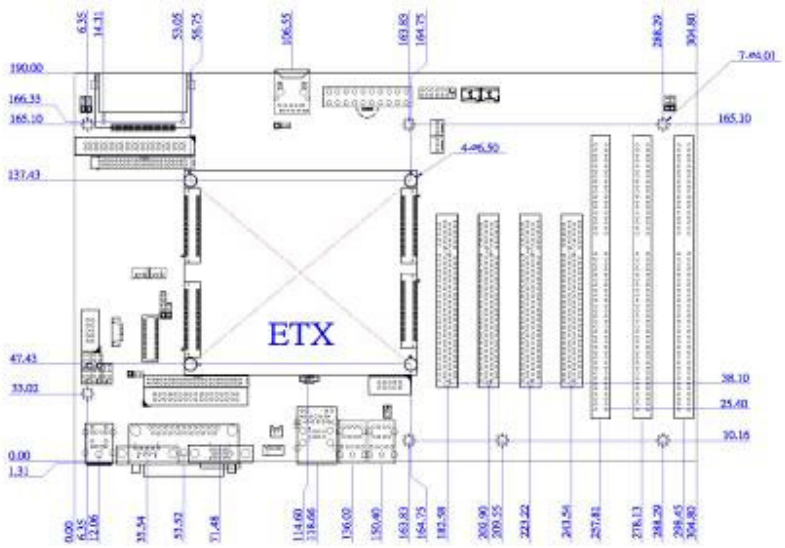
- **CPU: ETX module**
- **System Chipset: On the Module**
- **BIOS: On the module; optional socket on the baseboard**
- **System Memory**
  - On the module
- **Onboard IDE**
  - One Parallel ATA-100
- **CompactFlash™ Socket**
  - One CompactFlash™ Type II Socket
- **Onboard Multi I/O**
  - One LPT port with SPP/ECP/EPP compliant
  - One Floppy port, shared with LPT
  - One RS-232, one RS-232/422/485
  - One IrDA (Pin header) for wireless communication
- **USB Interface**
  - Four USB ports with fuse protection and complies with USB Spec. Rev. 2.0
- **Watchdog Timer**
  - 0~255 seconds; up to 255 levels
- **Expansion Slots**
  - Four 32-bit/33MHz PCI slots
  - Three ISA slots
- **Ethernet**
  - One from ETX SoM with trple deck RJ-45 connector with LED display over USB
  - Wake On LAN (via ATX power supply)
- **Audio**
  - Line-in/Line-out/MIC-in/Surround/Center Bass with PC99 compliant on the rear I/O

- **Power Management**
  - ACPI (Advanced Configuration and Power Interface)
- **Form Factor: ETX form factor 304.8 mm x 190 mm**

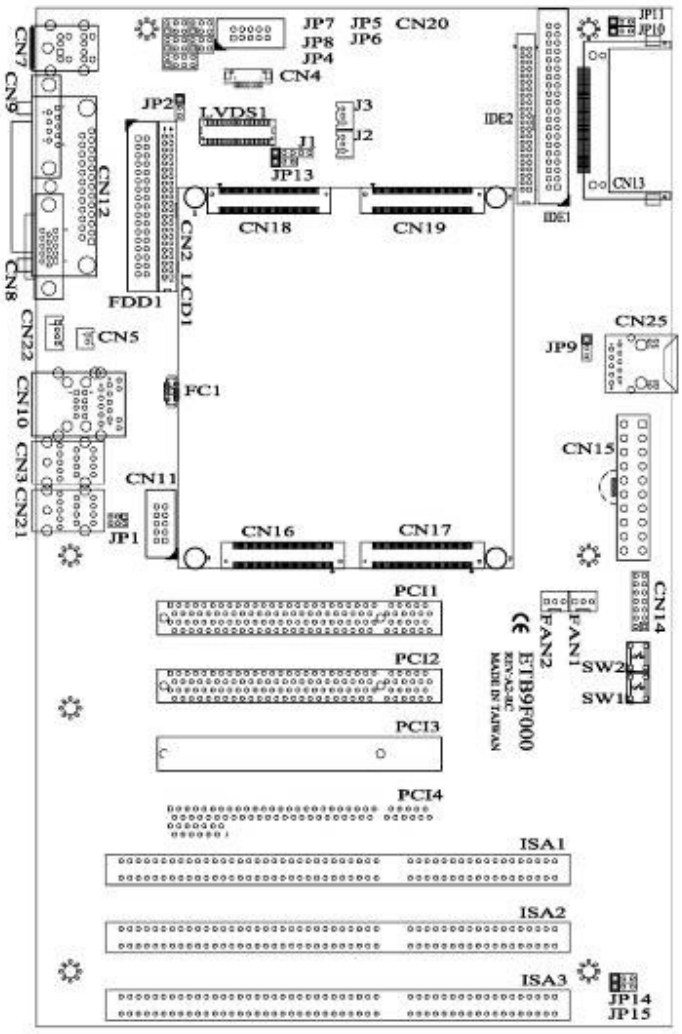
***NOTE**: All specifications and images are subject to change without notice.*

Chapter 2
Jumpers and Connectors

2.1 Board Dimensions and Fixing Holes



2.2 Board Layout



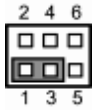
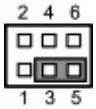
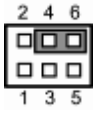
2.3 Jumper Settings

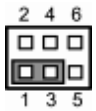
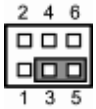
The **ETB9F000 Series** is configured to match the needs of your application with the proper jumper settings. The table below is a summary of all the jumpers and their corresponding functions onboard the **ETB9F000 Series**. The succeeding tables show the correct jumper settings for the onboard devices.

Jumper	Default Setting		Jumper Setting
JP1	LINE OUT Mode Select: None Amplifier		Short 1-3, 2-4
JP2	LCD Voltage select : 3.3V		Short 1-2
JP4	COM1 Mode Select: RS-232		Short 1-2
JP5	COM1 Mode Select: RS-232		Short 3-5, 4-6
JP6	COM1 Mode Select: RS-232		Short 3-5, 4-6
JP7	COM1 Mode Select	COM1 Pin 1: DCD	Short 3-5
		COM1 Pin 9: RI	Short 4-6
JP8	COM2 Mode Select	COM2 Pin 1: DCD	Short 3-5
		COM2 Pin 8: RI	Short 4-6
JP9	Clear CMOS Setting : Normal		Short 1-2
JP10	Compact Flash Voltage select : 3.3V		Short 1-2
JP11	Compact Flash Select : Slave		Short 1-2
JP13	LPT/FDD Device Select : LPT		Short 1-2
JP14	Watchdog Timer : RESET		Short 2-3
JP15	Debug Mode Select : Port 80h		Short 1-2

2.3.1 COM1 ~ COM2 Mode Select for Type Jumpers: JP7, JP8

These jumpers select the COM1, COM2 ports' DCD and RI mode.

Description	Function	Jumper Setting
COM1	Pin 1=5V	**JP7** 2 4 6  1 3 5
	Pin 1=DCD (Default)	**JP7** 2 4 6  1 3 5
	Pin 9=12V	**JP7** 2 4 6 1 3 5
	Pin 9=RI (Default)	**JP7** 2 4 6  1 3 5

Description	Function	Jumper Setting
COM2	Pin 1=5V	**JP8** 2 4 6  1 3 5
	Pin 1=DCD (Default)	**JP8** 2 4 6  1 3 5
	Pin 8=12V	**JP8** 2 4 6 1 3 5
	Pin 8=RI (Default)	**JP8** 2 4 6 1 3 5

2.3.2 COM1 Mode Select Jumpers: JP4, JP5, JP6

These jumpers select the COM1 port's communication mode to operate RS-232 or RS-422/485.

Description	Function	Jumper Setting		
COM1 Mode Select	RS-232 (Default)	JP4 2 4 6 8 1 3 5 7	JP5 2 4 6 1 3 5	JP6 2 4 6 1 3 5
	RS-422	JP4 2 4 6 8 1 3 5 7	JP5 2 4 6 1 3 5	JP6 2 4 6 1 3 5
	RS-485	JP4 2 4 6 8 1 3 5 7	JP5 2 4 6 1 3 5	JP6 2 4 6 1 3 5

2.3.3 LCD Voltage Selection Jumper: JP2

This jumper is to select the voltage for LCD interface.

Description	Function	Jumper Setting
LCD Voltage Selection	3.3V (Default)	JP2 1 2 3
	5V	JP2 1 2 3

2.3.4 CompactFlash™ Voltage Selection Jumper: JP10

This jumper is to select the voltage for CompactFlash™ interface.

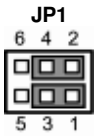
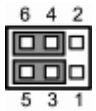
Description	Function	Jumper Setting
CompactFlash Voltage Selection	3.3V (Default)	
	5V	

2.3.5 CompactFlash™ IDE mode Selection Jumper: JP11

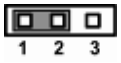
ETB9F000 CompactFlash™ IDE mode can be selected for Master/Slave by setting up jumper JP11.

Description	Function	Jumper Setting
CompactFlash IDE Mode Selection	Slave (Default)	
	Master	

2.3.6 Audio Line Out Mode Selection Jumper: JP1

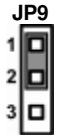
Description	Function	Jumper Setting
Audio Line Out Mode Selection	Audio None Amplifier (Default)	
	Audio Amplifier	

2.3.7 LPT & FDD Selection Jumper: JP13

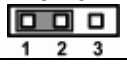
Description	Function	Jumper Setting
LPT & FDD Selection	LPT (Default)	JP13 
	FDD	JP13

2.3.8 Clear CMOS Setting Jumper: JP9

You may need to use this jumper is to clear the CMOS memory if incorrect settings in the Setup Utility.

Description	Function	Jumper Setting
Clear CMOS Setting	Normal (Default)	JP9 
	Clear CMOS	JP9

2.3.9 Debug Mode Selection Jumper: JP15

Description	Function	Jumper Setting
Debug Mode Selection	80h (Default)	JP15 
	300h	JP15

2.3.10 Watchdog Trigger Mode Setting Jumper: JP14

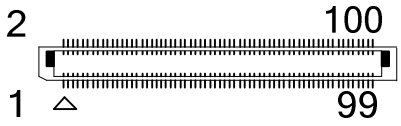
ETB9F000 features a special watchdog timer that can perform the sensitive error detection and report function. When the CPU processing comes to a halt, the watchdog either generates a NMI or resets the CPU.

Description	Function	Jumper Setting
Watchdog Trigger Mode Setting	NMI	JP14
	Reset (Default)	JP14

2.4 Connectors and Switches

Connectors	Label	Connectors	Label
RTC Battery	BAT1	Power Button	SW1
LCD Connector (LVDS)	LVDS1	Reset Button	SW2
FDD Connector	FDD1	FAN Connector	FAN1
Parallel IDE Connector (primary)	IDE1	FAN Connector	FAN2
Parallel IDE Connector(secondary)	IDE2	Printer Port Connector	CN12
TFT LCD Connector	CN2	Compact Flash™ Connector	CN13
LCD Inverter Connector	CN4	Front Panel Bezel Connector	CN14
TV-OUT	CN5	ATX Power Connector	CN15
S-Video (TV-OUT)	CN22	ETX Connector-**X**1	CN16
LAN1 Connector	CN25	ETX Connector-**X**2	CN17
6-PinMiniDim Keyboard/Mouse	CN7	ETX Connector-**X**3	CN18
VGA Connector	CN8	ETX Connector-**X**4	CN19
Serial Port1 Connector	CN9	Serial Port2 Connector	CN20
USB Port1 &Port2 Connector	CN10	ISA Slot1	ISA1
USB Port3 &Port4 Connector (Box Header)	CN11	ISA Slot2	ISA2
PCI Slot1	PCI1	ISA Slot3	ISA3
PCI Slot2	PCI2	IR Connector	J1
PCI Slot3	PCI3	I2C BUS Connector	J2
PCI Slot4	PCI4	SMBUS Connector	J3
Audio Connector (support 5.1 Channel Audio)	CN3	5.1 Channel Audio BUS Connector	FC1

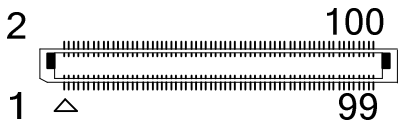
2.4.1 ETX Connector – X1: CN16



Pin	Description	Pin	Description
1	GND	2	GND
3	PCICLK3	4	PCICLK4
5	GND	6	GND
7	PCICLK1	8	PCICLK2
9	PCI_REQ3#	10	PCI_GNT3#
11	PCI_GNT2#	12	VCC3
13	PCI_REQ2#	14	PCI_GNT1#
15	PCI_REQ1#	16	VCC3
17	PCI_GNT0#	18	N.C.
19	VCC	20	VCC
21	SERIRQ	22	PCI_REQ0#
23	PCI_AD0	24	VCC3
25	PCI_AD1	26	PCI_AD2
27	PCI_AD4	28	PCI_AD3
29	PCI_AD6	30	PCI_AD5
31	PCI_C/BE0#	32	PCI_AD7
33	PCI_AD8	34	PCI_AD9
35	GND	36	GND
37	PCI_AD10	38	LINE_IN_L
39	PCI_AD11	40	MIC_IN
41	PCI_AD12	42	LINE_IN_R
43	PCI_AD13	44	ASVCC
45	PCI_AD14	46	LINE_OUT_L
47	PCI_AD15	48	AUDIO_GND
49	PCI_C/BE1#	50	LINE_OUT_R
51	VCC	52	VCC
53	PCI_PAR	54	PCI_SERR#

Pin	Description	Pin	Description
55	PCI_PERR#	56	N.C.
57	PCI_PME#	58	USB2-
59	PCI_LOCK#	60	PCI_DEVSEL#
61	PCI_TRDY#	62	USB3-
63	PCI_IRDY#	64	PCI_STOP#
65	PCI_FRAME#	66	USB2+
67	GND	68	GND
69	PCI_AD16	70	PCI_C/BE2#
71	PCI_AD17	72	USB3+
73	PCI_AD19	74	PCI_AD18
75	PCI_AD20	76	USB0-
77	PCI_AD22	78	PCI_AD21
79	PCI_AD23	80	USB1-
81	PCI_AD24	82	PCI_C/BE3#
83	VCC	84	VCC
85	PCI_AD25	86	PCI_AD26
87	PCI_AD28	88	USB0+
89	PCI_AD27	90	PCI_AD29
91	PCI_AD30	92	USB1+
93	PCI_RST#	94	PCI_AD31
95	PCI_INTC#	96	PCI_INTD#
97	PCI_INTA#	98	PCI_INTB#
99	GND	100	GND

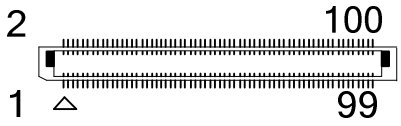
2.4.2 ETX Connector – X2: CN17



Pin	Description	Pin	Description
1	GND	2	GND
3	ISA_SD14	4	ISA_SD15
5	ISA_SD13	6	MASTER#
7	ISA_SD12	8	DREQ7
9	ISA_SD11	10	DACK7#
11	ISA_SD10	12	DREQ6
13	ISA_SD9	14	DACK6#
15	ISA_SD8	16	DREQ5
17	ISA_MEMW#	18	DACK5#
19	ISA_MEMR#	20	DREQ0
21	ISA_LA17	22	DACK0#
23	ISA_LA18	24	IRQ14
25	ISA_LA19	26	IRQ15
27	ISA_LA20	28	IRQ12
29	ISA_LA21	30	IRQ11
31	ISA_LA22	32	IRQ10
33	ISA_LA23	34	IOCS16#
35	GND	36	GND
37	SBHE#	38	MEMCS16#
39	ISA_SA0	40	ISA_OSC
41	ISA_SA1	42	BALE
43	ISA_SA2	44	TC
45	ISA_SA3	46	DACK2#
47	ISA_SA4	48	IRQ3
49	ISA_SA5	50	IRQ4
51	VCC	52	VCC
53	ISA_SA6	54	IRQ5

Pin	Description	Pin	Description
55	ISA_SA7	56	IRQ6
57	ISA_SA8	58	IRQ7
59	ISA_SA9	60	SYSCLK
61	ISA_SA10	62	REFRESH#
63	ISA_SA11	64	DREQ1
65	ISA_SA12	66	DACK1#
67	GND	68	GND
69	ISA_SA13	70	DREQ3
71	ISA_SA14	72	DACK3#
73	ISA_SA15	74	IOR#
75	ISA_SA16	76	IOW#
77	ISA_SA18	78	ISA_SA17
79	ISA_SA19	80	SMEMR#
81	IOCHRDY	82	AEN
83	VCC	84	VCC
85	ISA_SD0	86	SMEMW#
87	ISA_SD2	88	ISA_SD1
89	ISA_SD3	90	N0WS#
91	DREQ2	92	ISA_SD4
93	ISA_SD5	94	IRQ9
95	ISA_SD6	96	ISA_SD7
97	IOCHK#	98	RSTDRV
99	GND	100	GND

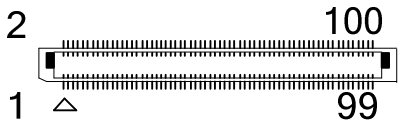
2.4.3 ETX Connector – X3: CN18



Pin	Description	Pin	Description
1	GND	2	GND
3	RED	4	BLUE
5	HSYNC	6	GREEN
7	VSYNC	8	DDCK
9	TTL_B0	10	DDDA
11	LCD2CLK-/TTL_B6	12	LCD2DO3-
13	LCD2CLK+/TTL_B7	14	LCD2DO3+
15	GND	16	GND
17	LCD2DO1+/TTL_B3	18	LCD2DO2+/TTL_B5
19	LCD2DO1-/TTL_B2	20	LCD2DO2-/TTL_B4
21	GND	22	GND
23	LCD1DO3-/TTL_G4	24	LCD2DO0+/TTL_G7
25	LCD1DO3+/TTL_G5	26	LCD2DO0-/TTL_G6
27	GND	28	GND
29	LCD1DO2-/TTL_R6	30	LCD1CLK+/TTL_G3
31	LCD1DO2+/TTL_R7	32	LCD1CLK-/TTL_G2
33	GND	34	GND
35	LCD1DO0+/TTL_R3	36	LCD1DO1+/TTL_R5
37	LCD1DO0-/TTL_R2	38	LCD1DO1-/TTL_R4
39	VCC	40	VCC
41	N.C.	42	N.C
43	N.C.	44	BLON#
45	BIASON/HSYNC	46	DIGON
47	COMP	48	Y
49	N.C	50	C
51	LPT/FLPY#	52	TTL_G0
53	VCC	54	GND

Pin	Description	Pin	Description
55	STB#/N.C.	56	AFD#/DENSEL
57	TTL_R0	58	PD7/N.C
59	IRRX	60	ERR#/HDSEL#
61	IRTX	62	PD6/N.C
63	RXD2	64	INIT#/DIR#
65	GND	66	GND
67	RTS2#	68	PD5/N.C
69	DTR2#	70	SLIN#/STEP#
71	DCD2#	72	PD4/DSKCHG#
73	DSR2#	74	PD3/RDATA#
75	CTS2#	76	PD2/WP#
77	TXD2#	78	PD1/TRK0#
79	RI2#	80	PD0/INDEX#
81	VCC	82	VCC
83	RXD1	84	ACK#/DRV
85	RTS1#	86	BUSY#/MOT
87	DTR1#	88	PE/WDATA#
89	DCD1#	90	SLCT#/WGATE#
91	DSR1#	92	MSCLK
93	CTS1#	94	MSDAT
95	TXD1#	96	KBCLK
97	RI1#	98	KBDAT
99	GND	100	GND

2.4.4 ETX Connector – X4: CN19



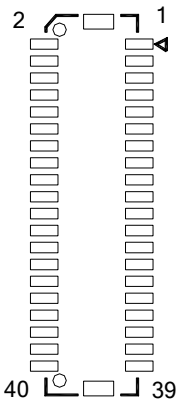
Pin	Description	Pin	Description
1	GND	2	GND
3	5VSB	4	PWGIN
5	PS_ON	6	SPEAKER
7	PWRBTN#	8	RTC_BATTERY
9	N.C	10	LILED
11	RSMRST#	12	ACTLED
13	TTL_B1	14	SPEEDLED
15	TTL_R1	16	I2CLK
17	VCC	18	VCC
19	OVCR#	20	N.C
21	N.C	22	I2C_DAT
23	SMBCLK	24	SMBDAT
25	SIDE_CS3#	26	N.C
27	SIDE_CS1#	28	DASP_S
29	SIDE_A2	30	PIDE_CS3#
31	SIDE_A0	32	PIDE_CS1#
33	GND	34	GND
35	PDIAG_S	36	PIDE_A2#
37	SIDE_A1	38	PIDE_A0#
39	SIDE_INTRQ	40	PIDE_A1#
41	N.C	42	TTL_G1
43	SIDE_ACK#	44	PIDE_INTRQ
45	SIDE_RDY	46	PIDE_ACK#
47	SIDE_IOR#	48	PIDE_RDY
49	VCC	50	VCC
51	SIDE_IOW#	52	PIDE_IOR#
53	SIDE_DRQ	54	PIDE_IOW#

Pin	Description	Pin	Description
55	SIDE_D15	56	PIDE_DRQ
57	SIDE_D0	58	PIDE_D15
59	SIDE_D14	60	PIDE_D0
61	SIDE_D1	62	PIDE_D14
63	SIDE_D13	64	PIDE_D1
65	GND	66	GND
67	SIDE_D2	68	PIDE_D13
69	SIDE_D12	70	PIDE_D2
71	SIDE_D3	72	PIDE_D12
73	SIDE_D11	74	PIDE_D3
75	SIDE_D4	76	PIDE_D11
77	SIDE_D10	78	PIDE_D4
79	SIDE_D5	80	PIDE_D10
81	VCC	82	VCC
83	SIDE_D9	84	PIDE_D5
85	SIDE_D6	86	PIDE_D9
87	SIDE_D8	88	PIDE_D6
89	GPE2#	90	CBLID_P#
91	LAN_RX-	92	PIDE_D8
93	LAN_RX+	94	SIDE_D7
95	LAN_TX-	96	PIDE_D7
97	LAN_TX+	98	HDRST#
99	GND	100	GND

2.4.5 40-Pin LVDS Connector: LVDS1

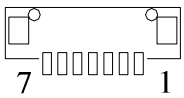
The PIN 32/30 Channel A D3+/- signals and PIN 13/11 Channel B D3+/- signals are used for single or dual Channel 24-bit LCD panel. When LCD panel is single Channel 24-bit, it is using the PIN 32/30 Channel A D3+/- signals.

Pin	Deception	Pin	Deception
1	VCCM	2	VCCM
3	VCCM	4	VCCM
5	VCCM	6	VCCM
7	N.C.	8	N.C.
9	GND	10	GND
11	Channel B D3-	12	Channel B D0-
13	Channel B D3+	14	Channel B D0+
15	GND	16	GND
17	Channel B CLK-	18	Channel B D1-
19	Channel B CLK+	20	Channel B D1+
21	GND	22	GND
23	Channel A D0-	24	Channel B D2-
25	Channel A D0+	26	Channel B D2+
27	GND	28	GND
29	Channel A D1-	30	Channel A D3-
31	Channel A D1+	32	Channel A D3+
33	GND	34	GND
35	Channel A D2-	36	Channel A CLK-
37	Channel A D2+	38	Channel A CLK+
39	GND	40	GND



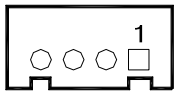
2.4.6 7-Pin Inverter Connector: CN4

Pin	Description	Pin	Description
1	VCC12M1	2	VCC12M1
3	VCC	4	BLEN
5	GND	6	GND
7	GND		



2.4.7 Video Connector: CN22

Pin	Descriptio	Pin	Description
1	GND	2	NC
3	CHROMA	4	LUMA

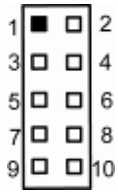


2.4.8 TV Connector: CN5

Pin	Description	Pin	Description
1	COMPOSITE	2	GND

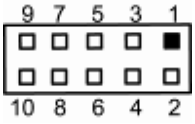
2.4.9 COM Port (Box-Heade

Pin	Description	Pin	Description
1	Data Carrier Detect	2	Data Set Ready (DSR)
3	Receive Data (RXD)	4	Request to Send
5	Transmit Data (TXD)	6	Clear to Send (CTS)
7	Data Terminal Ready	8	Ring Indicator (RI)
9	Ground (GND)	10	No connector

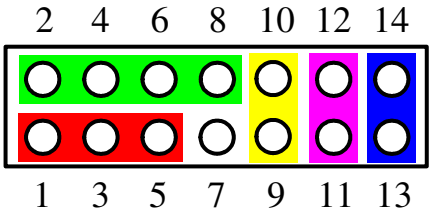


2.4.10 USB Connecotor (Box-Header): CN11

Pin	Description	Pin	Description
1	VCC	2	VCC
3	USB1-	4	USB2-
5	USB1+	6	USB2+
7	GND	8	GND
9	GND	10	GND



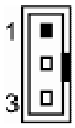
2.4.11 Flat Panel Bezel Connecotor: CN15



- **Power LED**
  This 3-pin connector named as Pin 1, 3 and 5 connects the system power LED indicator to such a switch on the case. Pin 1 is assigned as +, and Pin 5 as -. The Power LED lights up when the system is powered ON.
- **External Speaker and Internal buzzer Connector**
  Pin 2, 4, 6 and 8 can be connected to the case-mounted speaker unit or internal buzzer. While connecting the CPU card to an internal buzzer, you need to short pins 2-4; while connecting to an external speaker, set pins 2-4 to Open and connect the speaker cable to pin 8 (+) and pin 2 (-).
- **ATX Power On/Off Button**
  This 2-pin connector named as Pin 9 and 10 connects the front panel's ATX power button to the CPU card, which allows users to control ATX power supply to be on/off.
- **System Reset Switch**
  Pin 11 and 12 can be connected to the case-mounted reset switch that reboots your computer instead of turning OFF the power switch. It is a better way to reboot your system for a longer life of the system's power supply.
- **HDD Activity LED**
  This connection is linked to hard drive activity LED on the control panel. LED flashes when HDD is being accessed. Pin 13 and 14 connect the hard disk drive to the front panel HDD LED, Pin 13 assigned as -, and Pin 14 as +.

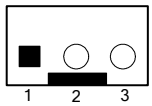
2.4.12 I2C Bus Connecotor: J2

Pin	Description
1	CLOCK
2	DATA
3	GND



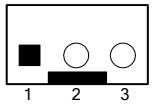
2.4.13 SM Bus Connecotor: J3

Pin	Description
1	GND
2	+12V
3	N.C



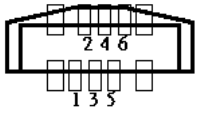
2.4.14 3-Pin Fan Connecotors: FAN1/FAN2

Pin	Description
1	GND
2	+12V
3	N.C



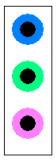
2.4.15 5.1 Channel Audio Bus Connecotor: FC1

Pin	Description	Pin	Description
1	SURR_OUT_R	2	GND VCC
3	SURR_OUT_L	4	GND USB2-
5	CEN_OUT	6	LFE-C



2.4.16 Audio Connecotor: CN3

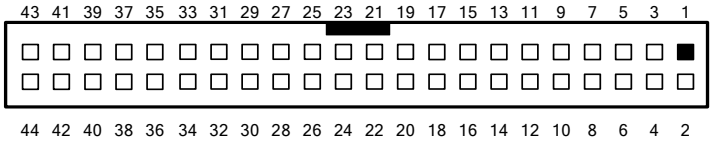
Color	Description
Blue	LINE_IN
Green	LINE_OUT
Red	MIC_IN



2.4.17 5.1 Channel Audio Connecotor: CN21

Color	Description
Orange	SURROUND
Black	CENTER BASS
Gray	N.C

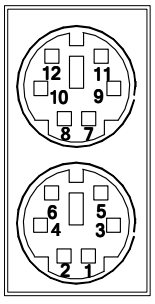
2.4.18 44Pin TTL Flat Panel Connector: CN2



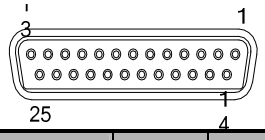
Pin	Description	Pin	Description	Pin	Description
1	-12V	2	+12VM	3	GND
4	GND	5	VDDM	6	VDDM
7	L_VDDEN	8	GND	9	B0
10	B1	11	B2	12	B3
13	B4	14	B5	15	B6
16	B7	17	G0	18	G1
19	G2	20	G3	21	G4
22	G5	23	G6	24	G7
25	R0	26	R1	27	R2
28	R3	29	R4	30	R5
31	R6	32	R7	33	GND
34	GND	35	SHFCLK	36	VSY
37	M	38	HSY	39	GND
40	ENABKL	41	GND	42	-SHFCLK
43	VDDM	44	VDDM		

2.4.19 Keyboard & Mouse Connector: CN7

Pin	Description	Pin	Description
1	K/B Data	7	M/S Data
2	NC	8	NC
3	GND	9	GND
4	VCC	10	VCC
5	K/B CLK	11	M/S CLK
6	NC	12	NC



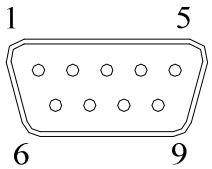
2.4.20 Parallel Port Connector: CN12



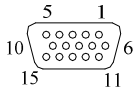
Pin	Description	Pin	Description
1	Strobe#	14	Auto Form Feed#
2	Data 0	15	Error#
3	Data 1	16	Initialize#
4	Data 2	17	Printer Select In#
5	Data 3	18	GND
6	Data 4	19	GND
7	Data 5	20	GND
8	Data 6	21	GND
9	Data 7	22	GND
10	Acknowledge#	23	GND
11	Busy	24	GND
12	Paper Empty#	25	GND
13	Printer Select		

2.4.21 COM Port Connector: CN9

Pin	Description
1	Data Carrier Detect (DCD)
2	Receive Data (RXD)
3	Transmit Data (TXD)
4	Data Terminal Ready (DTR)
5	Ground (GND)
6	Data Set Ready (DSR)
7	Request to Send (RTS)
8	Clear to Send (CTS)
9	Ring Indicator (RI)



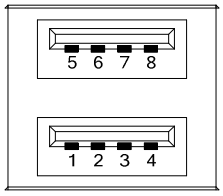
2.4.22 VGAConnector: CN8



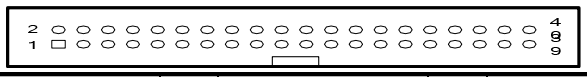
Pin	Signal	Pin	Signal	Pin	Signal
1	Red	2	Green	3	Blue
4	N/A	5	GND	6	AGND
7	AGND	8	AGND	9	NC
10	GND	11	NC	12	DDC DATA
13	Horizontal Sync	14	Vertical Sync	15	DDC CLK

2.4.23 USB Connectors: CN10

Pin	Signal Name
1,5	USB Vcc
2,6	USB -
3,7	USB +
4,8	USB GND



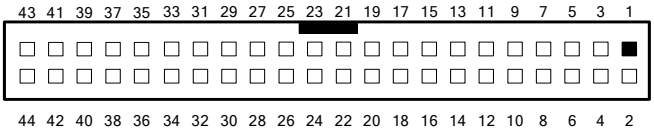
2.4.24 40 Pin IDE Interface Connector: IDE1



Pin	Description	Pin	Description	Pin	Description
1	Reset #	2	GND	3	Data 7
4	Data 8	5	Data 6	6	Data 9
7	Data 5	8	Data 10	9	Data 4
10	Data 11	11	Data 3	12	Data 12
13	Data 2	14	Data 13	15	Data 1
16	Data 14	17	Data 0	18	Data 15
19	GND	20	No connector	21	No connector
22	GND	23	IOW #	24	GND
25	IOR #	26	GND	27	IOCHRDY
28	No connector	29	No connector	30	GND-Default
31	Interrupt	32	No connector	33	SA1
34	No connector	35	SA0	36	SA2
37	HDC CS0 #	38	HDC CSI #	39	HDD Active #
40	GND				

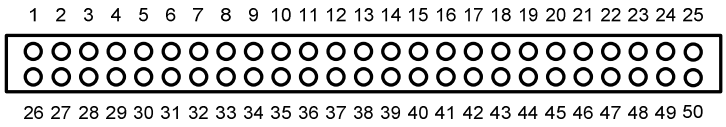
2.4.25 44 Pin IDE Interface Connector: IDE2

2.4.26



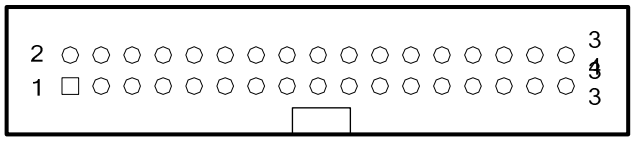
Pin	Description	Pin	Description	Pin	Description
1	Reset #	2	GND	3	Data 7
4	Data 8	5	Data 6	6	Data 9
7	Data 5	8	Data 10	9	Data 4
10	Data 11	11	Data 3	12	Data 12
13	Data 2	14	Data 13	15	Data 1
16	Data 14	17	Data 0	18	Data 15
19	GND	20	No connector	21	No connector
22	GND	23	IOW #	24	GND
25	IOR #	26	GND	27	IOCHRDY
28	No connector	29	No connector	30	GND-Default
31	Interrupt	32	No connector	33	SA1
34	No connector	35	SA0	36	SA2
37	HDC CS0 #	38	HDC CSI #	39	HDD Active #
40	GND	41	VCC	42	VCC
43	GND	44	N.C		

2.4.25 CF Socket: CN13



Pin	Description	Pin	Description
1	GND	26	CD1-
2	Data 3	27	Data 11
3	Data 4	28	Data 12
4	Data 5	29	Data 13
5	Data 6	30	Data 14
6	Data 7	31	Data 15
7	CS0#	32	CS1#
8	Address 10	33	VS1#
9	ATASEL	34	IORD#
10	Address 9	35	IOWR#
11	Address 8	36	WE#
12	Address 7	37	INTR
13	VCC	38	VCC
14	Address 6	39	CSEL#
15	Address 5	40	VS2#
16	Address 4	41	RESET#
17	Address 3	42	IORDY#
18	Address 2	43	DMAREQ
19	Address 1	44	DMAACK-
20	Address 0	45	DASP#
21	Data 0	46	PDIAG#
22	Data 1	47	Data 8
23	Data 2	48	Data 9
24	IOCS16#	49	Data 10
25	CD2#	50	GND

2.4.26 Floppy Disk Connector: FDD1



Pin	Description	Pin	Description	Pin	Description
1	GND	2	Reduce write current	3	GND
4	No connector	5	GND	6	No connector
7	GND	8	Index#	9	GND
10	Motor enable A#	11	GND	12	Drive select B#
13	GND	14	Drive select A#	15	GND
16	Motor enable B#	17	GND	18	Direction#
19	GND	20	STEP#	21	GND
22	Write data#	23	GND	24	Write gate#
25	GND	26	Track 0 #	27	GND
28	Write protect#	29	GND	30	Read data#
31	GND	32	Side 1 select#	33	GND
34	Disk change#				

Appendix
Watchdog Timer

Using the Watchdog Function

The ETB9F000 ETX Evaluation Platform Base Board is using Watchdog Timer Version 2.0, which generates either a system reset or non-maskable interrupt (NMI), depending on the JP14 jumper settings. Enable and program the function as below:

Start
↓
Un-Lock WDT : OUT 120H 0AH ; enter WDT function
OUT 120H 0BH ; enable WDT function
↓
Set multiple (1~4) : OUT 120 0NH ; N=1,2,3 or 4
↓
Set base timer (0~F) : OUT 121 0MH ; M=0,1,2,…F
↓
WDT counting
↓
re-set timer : OUT 121 0MH ; M=0,1,2,…F
↓
IF No re-set timer : WDT time-out, generate RESET or NMI
↓
IF to disable WDT : OUT 120 00H ; Can be disable at any time

M	N			
	1	2	3	4
0	0.5 sec.	5 secs.	50 secs.	100 secs.
1	1 sec.	10 secs.	100 secs.	200 secs.
2	1.5 secs.	15 secs.	150 secs.	300 secs.
3	2 secs.	20 secs.	200 secs.	400 secs.
4	2.5 secs.	25 secs.	250 secs.	500 secs.
5	3 secs.	30 secs.	300 secs.	600 secs.
6	3.5 secs.	35 secs.	350 secs.	700 secs.
7	4 secs.	40 secs.	400 secs.	800 secs.
8	4.5 secs.	45 secs.	450 secs.	900 secs.
9	5 secs.	50 secs.	500 secs.	1000 secs.
A	5.5 secs.	55 secs.	550 secs.	1100 secs.
B	6 secs.	60 secs.	600 secs.	1200 secs.
C	6.5 secs.	65 secs.	650 secs.	1300 secs.
D	7 secs.	70 secs.	700 secs.	1400 secs.
E	7.5 secs.	75 secs.	750 secs.	1500 secs.
F	8 secs.	80 secs.	800 secs.	1600 secs.